



# USER MANUAL

MODEL:

**AVDS**  
CAT 5 Audio/Video Display  
System

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P/N: 2900-300281 Rev 2

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# 1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **AVDS CAT 5 Audio/Video Display System**, which is ideal for the following typical applications:

- Digital signage
- Media distribution
- Computer based training

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## 2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual



Go to <http://www.kramerelectronics.com> to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

### 2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **AVDS** away from moisture, excessive sunlight and dust



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.



Place cables away from fluorescent lights, air conditioners, and machines that are likely to generate electrical noise.

**Note!** In the AVDS system the CAT 5 cables carry electrical power. Therefore do **NOT** connect them to any other device. To avoid this we recommend you attach the stickers provided to the ends of each CAT 5 cable.

## 2.2 Safety Instructions



**Caution:** There are no operator serviceable parts inside the unit

**Warning:** Use only the Kramer Electronics input power wall adapter that is provided with the unit

**Warning:** Disconnect the power and unplug the unit from the wall before installing

## 2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at [http://www.kramerelectronics.com \(support/recycling/\)](http://www.kramerelectronics.com/support/recycling/).

## 3 Overview

The **AVDS CAT 5 Audio/Video Display System** from Minicom broadcasts real-time high-resolution video and mono audio signals to hundreds of remote display monitors and speakers.

This table defines the **AVDS** system models:

Kramer Model	Kramer Part Number	Full Description
AVDS-B (0VS22014)	50-0000679012	Minicom AVDS CAT5 Audio Video Display Broadcaster 8-ports
AVDS-LS (0VS22015)	50-0000689012	Minicom AVDS CAT5 Audio Video Display Line Splitter 8-ports
AVDS-RP (0VS22036)	50-0000699012	Minicom AVDS CAT5 Audio Video Display Power Remote
AVDS-R (0VS23009)	50-0000989011	Minicom AVDS CAT5 Audio Video Display Remote



**Warning:** Do not connect any of the **VDS** products to the **AVDS** system. Damage will occur.

### 3.1 The Multi-Functional AVDS System

You can use the AVDS system in the following ways:

#### Without the Control Unit

The AVDS system constantly broadcasts a computer screen with audio to all remote monitors/speakers.

#### With the Control Unit

- Broadcast a computer screen with audio to all remote monitors/speakers
- Darken all remote screens (audio broadcast is unaffected)
- Release the remote screens to allow local monitor viewing (when remote computers are connected)

The screen dark function is useful when carrying out maintenance, changing the broadcast program or in a classroom environment to grab students' attention.

With both applications broadcast the video up to resolutions of 1920x1080 @ 60Hz, 1080p depending on the cable length.

[Figure 1](#) illustrates the Broadcaster unit and [Figure 2](#) the Line Splitter.

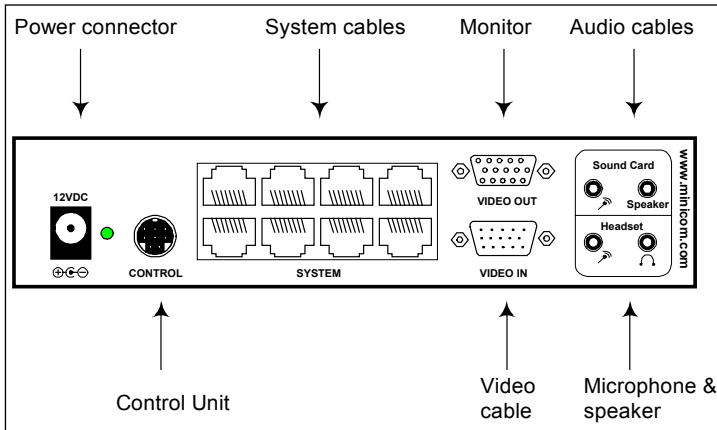


Figure 1 Broadcaster Unit

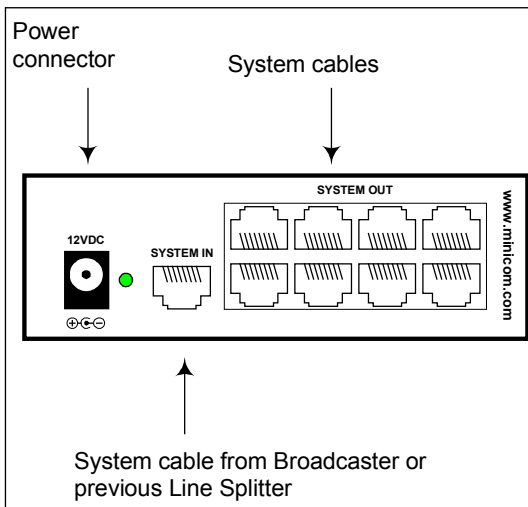


Figure 2 Line Splitter

## 3.2 Remote and Power Remote Units



**Note!** Any reference to Remote units refers to both Remote and Power Remote units unless stated otherwise.

Both types of Remote units can be up to 110m (360ft) away from the Broadcaster.

The two Remote unit types differ as follows:

The Remote units:

- Receive power from the connected shielded CAT 5 FTP cable
- Must be connected with shielded CAT 5 FTP cables with metal RJ-45 connectors that have the drain wire soldered to them

The Power Remote units:

- Need a separate power supply (provided)
- Can be connected with shielded CAT 5 FTP or CAT 5 UTP cables
- Produce high-quality audio signals

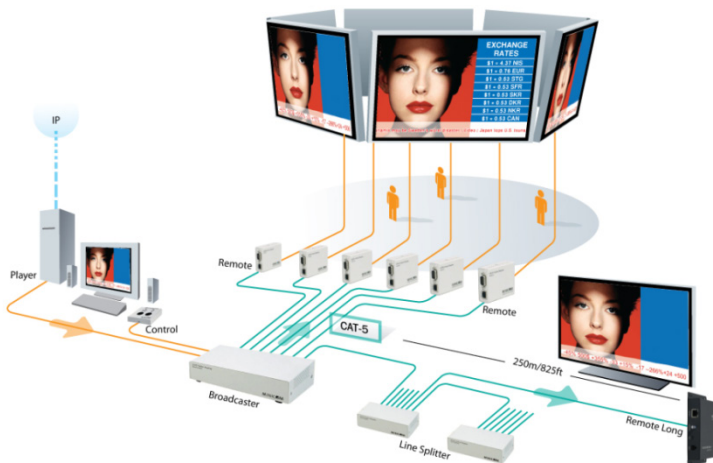


Figure 3 System Diagram



### 3.3 Remote Long Units

AVDS RL transmits full HD video and mono audio to a plasma/LCD screen located up to 250m (825ft) away over CAT 5/6/7 cable.

The AVDS RL displays rich multimedia content to a single screen in real-time, over a long distance (with skew correction capability), without degradation to video or sound quality.

Figures 4, 5, 6 and 7 illustrate the Remote units.



Figure 4 Remote Long Connected to a Broadcaster

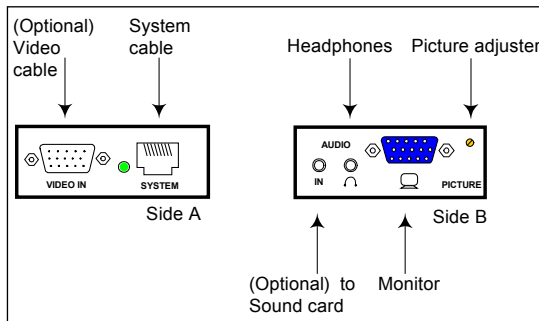


Figure 5 Remote Unit

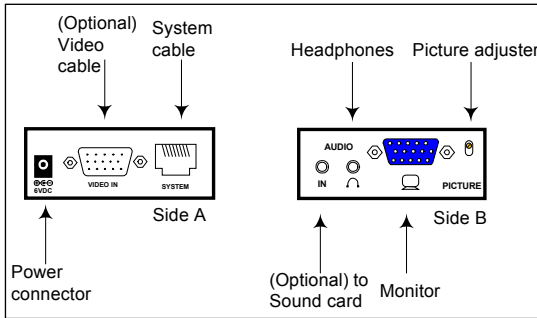


Figure 6 Power Remote Unit

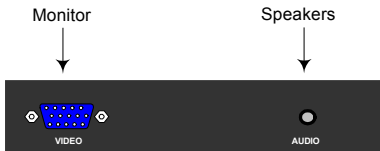


Figure 7 Remote Long – Side 1

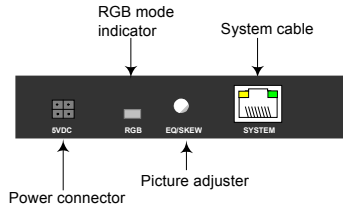


Figure 8 Remote Long – Side 2

The Remote Long system port LEDS indicate the following:

System Port	
LED	Indication when lit
1	The Remote Long detects a video signal from the Broadcaster/Transmitter
2	Power

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## 4 Connecting the AVDS Cables

[Figure 9](#) illustrates the AVDS cables with their connections.

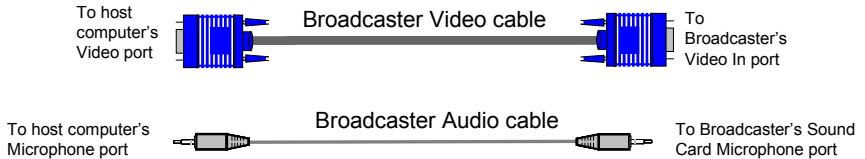


Figure 9 AVDS Cables

### 4.1 Connecting an Optional Remote Computer

You have the option to connect the Remote units (not a Remote Long unit) to a computer, which can be worked on locally. To do so you need to connect Video and Audio cables between the Remote unit and a computer. Remote Video and Audio cables are available for order.

### 4.2 Connecting the CAT 5 Cables

AVDS works with CAT 5/5e/6/7 data solid wire cabling.



**Note!** Connect the CAT 5 cables to the Broadcaster and Line Splitter units when the units are powered off. We recommend that you connect the CAT 5 cables **BEFORE** connecting the power supply.

### 4.3 Connecting the Remote Long Unit

Connect a CAT 5/6/7 cable as follows:

- Connect the CAT 5/6/7 cable - up to a distance of 250m (825ft) - to the System port of the Remote Long and the System port of the Transmitter/Broadcaster or Line Splitter. See [Figure 4](#) above

### 4.4 Connecting the Screens

- Connect the screen/display to the Remote/Long Video port using the screen's video cable
- Connect the screen/speakers to the Remote/Long Audio port using the screen's audio cable

## 4.5 Connecting the Power Supply

### Broadcaster and Line Splitters

- Connect the Broadcaster and Line Splitters to the power supply with the 12V DC, 2A from the AC/DC adapter provided

### Power Remote

- Connect the Power Remote to the power supply with 6V DC, from the AC/DC Power adapter provided

### Remote units

- The Remote units receive 12V DC, 160mA via the CAT 5 cables from the Broadcaster or Line Splitter

### Remote Long

- Connect the Remote Long to the power supply with the 5V DC Power adapter provided

Once connected, the system is ready to transmit the video and audio signals.

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## 5 Expanding the AVDS System

You can expand the AVDS system to 512 Remote units by having up to two levels of Line Splitters. Each Line Splitter on level 1 can have eight Remote units or Line Splitters connected to it. Each Line Splitter on level 2 can connect to eight Remote units. ([Figure 10](#) illustrates the configuration diagram).

[Figure 10](#) illustrates the expanded AVDS configuration without optional computers connected to the Remote units. The connections are minus the Remote Video and Audio cables.

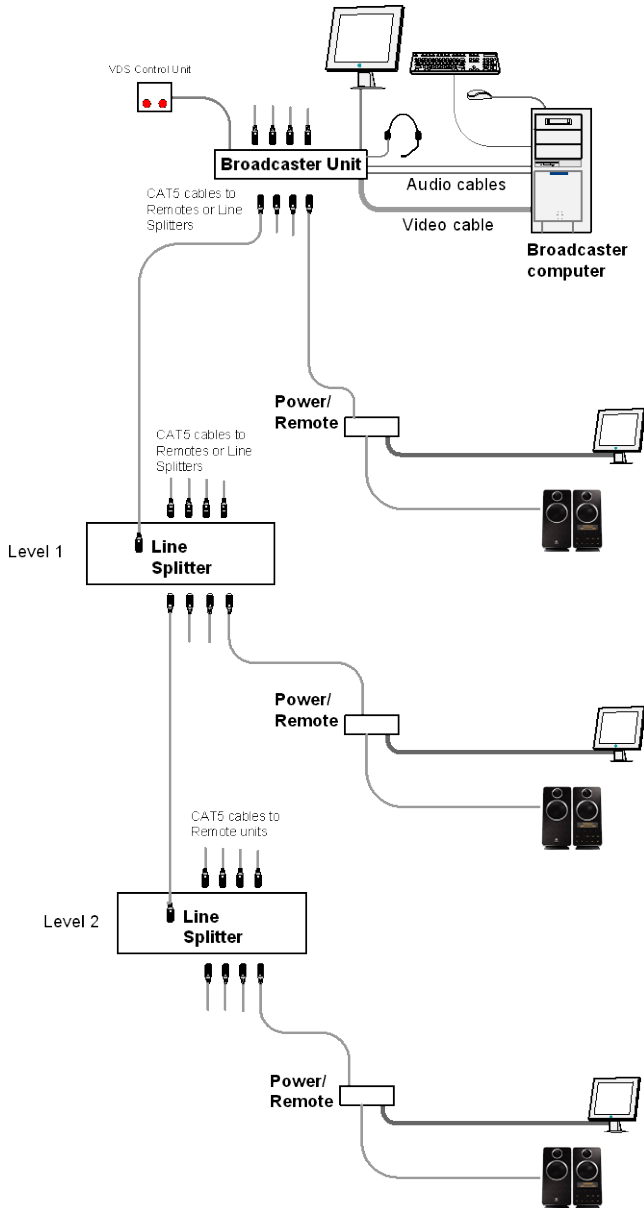


Figure 10 Expanded AVDS

## 5.1 The AVDS Configuration for a CBT Application

Figure 11 illustrates the AVDS configuration for computer based training with the Control unit and the optional remote computers.

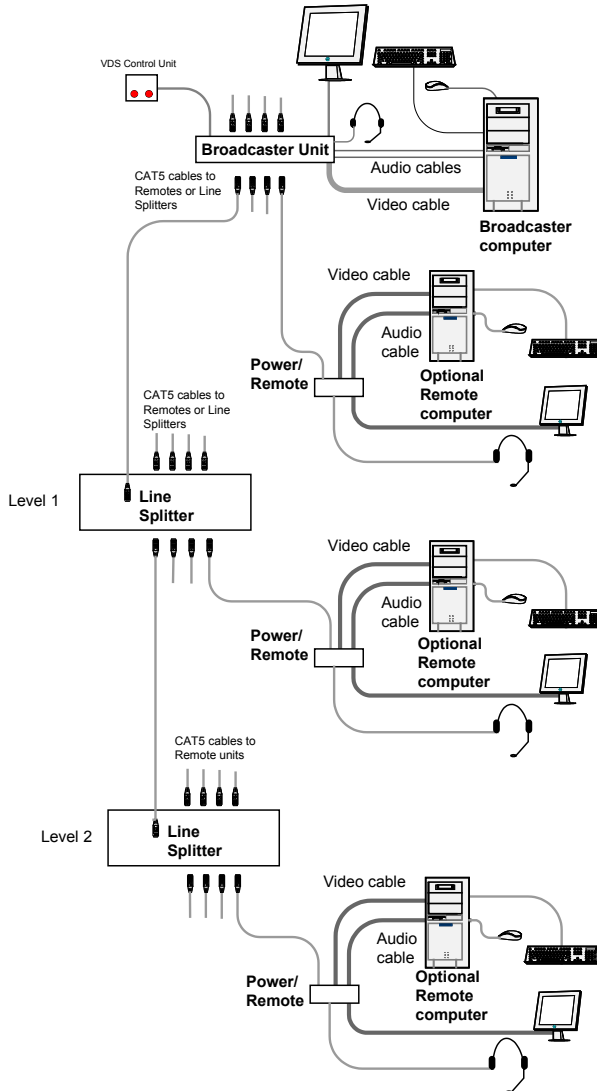


Figure 11 CBT Application

## 5.2 AVDS Detailed Connections

Figure 12 illustrates the detailed connections of the AVDS units.

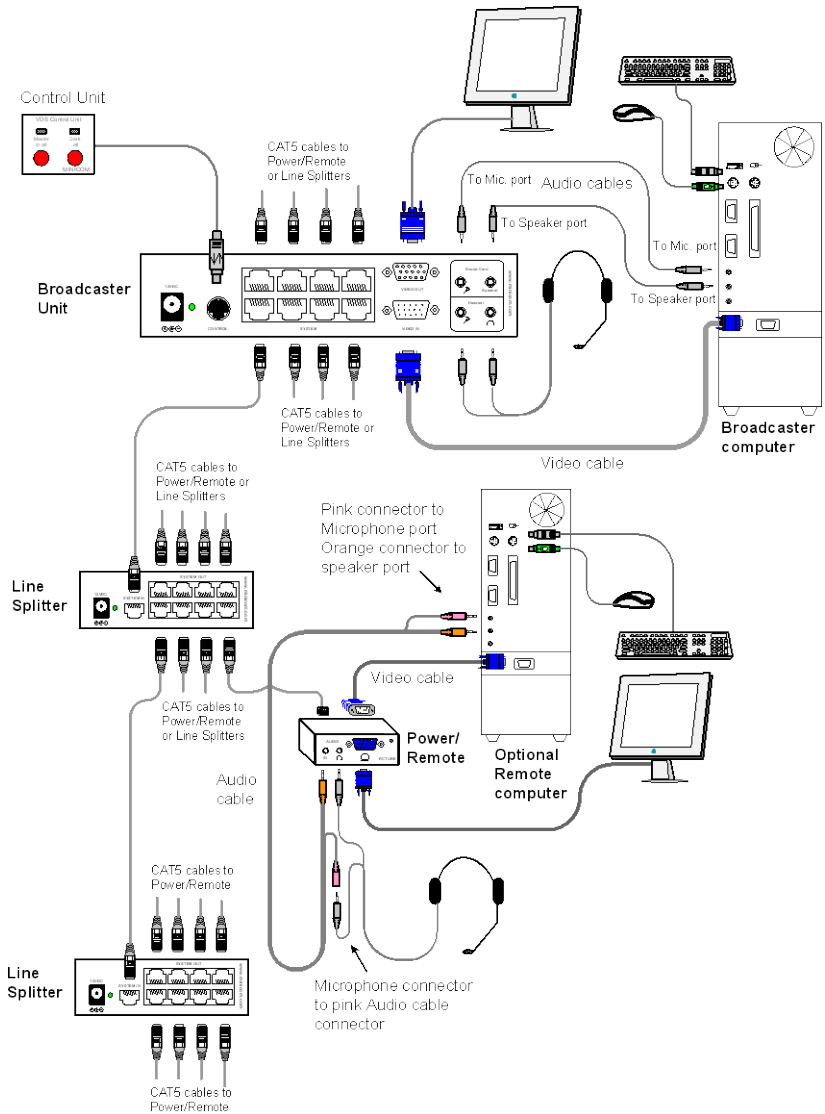


Figure 12 AVDS Detailed Connection



## 6 Operating the AVDS System

Once connected the AVDS system broadcasts to all remote monitors/speakers.

### 6.1 The Control Unit

[Figure 13](#) illustrates the Control unit.

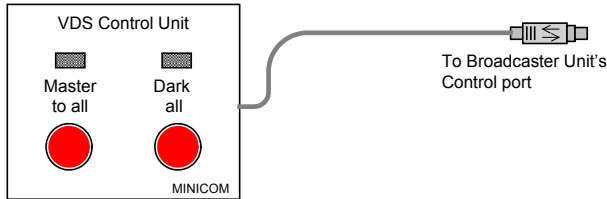


Figure 13 Control Unit

The control unit performs the following functions:

#### **Master to All**

Press the MASTER TO ALL button to send the broadcaster's screen with audio to all remote monitors /speakers. The LED above the button lights up.

Press the button again to release the remote monitors/speakers, allowing local monitor viewing (when remote computers are connected).

#### **Dark All**

Press the DARK ALL button to darken all remote screens. The LED above the button lights up. (This does not affect audio broadcasting).

Press the button again to release the remote monitors.

#### **Adjusting the Picture Quality**

When the picture needs adjusting, tune the picture as follows:

For the Remote unit

- Use a small screwdriver to turn the Picture adjuster on the Remote unit to

adjust the picture quality

For the Remote Long unit

- To enter the tuning mode, hold down the Remote Long's EQ/SKEW knob (see Figure 8) for 4 seconds, the RGB LED turns red. During the tuning procedure the RGB LED goes through a cycle of six different colors, with each color representing a different parameter to tune

The color order is: Red > Green > Blue > White > Orange.

The colors mean the following:

- Red, green and blue – red, green and blue skew correction
- White – peak correction
- Orange – gain correction

To adjust the picture for each color, rotate the knob. When the RGB LED flashes it means that the maximum or minimum tuning parameter has been reached.

Once the tuning is satisfactory, press the knob to save the adjustment and move to the next color. By not pressing the knob, adjustments done for the currently lit color, is not saved and the unit exits the tuning mode after approximately 13 seconds of inactivity.

### **Exiting Tuning Mode**

The unit automatically exits the tuning mode either at the end of the color cycle - after pressing and saving the orange color adjustment - or (as already mentioned) at any point in the process after not touching the knob for approximately 13 seconds. The LED turns off.

## 7 Technical Specifications

	Broadcaster	Line Splitter	Remote	Power Remote	Remote Long
INPUTS:	1 VGA on a 15-pin HD connector 1 TP on an RJ-45 connector 1 mono audio on a 3.5mm mini jack 1 mic/headphone on a 3.5mm mini jack 1 control port on a 8-pin mini-DIN connector	1 TP on an RJ-45 connector	1 VGA on a 15-pin HD connector 1 TP on an RJ-45 connector	1 VGA on a 15-pin HD connector 1 TP on an RJ-45 connector	1 VGA on a 15-pin HD connector 1 TP on an RJ-45 connector
OUTPUTS:	1 VGA on a 15-pin HD connector 8 TP on RJ-45 connectors	8 TP on RJ-45 connectors	1 VGA on a 15-pin HD connector	1 VGA on a 15-pin HD connector	1 VGA on a 15-pin HD connector
RESOLUTION:	HDTV 1080p, 1920x1080 @60Hz (depending on cable length)				
SYSTEM CABLE:	CAT 5, 5e, 6, 7 Shielded FTP/UTP cable 2 x 4 x 24AWG solid wire cable Power Remote & Remote Long can work with UTP cable				
MAX DISTANCE:	250m (825ft)				
INPUT/OUTPUT VIDEO SIGNALS:	Analog signal red, green, blue 0.7Vpp 75Ω				
SYNC:	TTL compatible				
HORIZONTAL/ VERTICAL SYNC. POLARITY:	Positive/negative				
AUDIO:	Mono				
AUDIO FREQUENCY RESPONSE:	150Hz-5kHz				
OPERATING TEMPERATURE:	0° to 40°C (32° to 104°F)				
STORAGE TEMPERATURE:	-40° to 70°C (-40° to 158°F)				
HUMIDITY:	80% non-condensing relative humidity				
DIMENSIONS:	15 x 9.4 x 4.2cm (5.9" x 3.7" x 1.6")	11.8 x 9.6 x 4.2cm (3.9" x 3.1" x 1.4")	7.8 x 6.2 x 3.2 cm (3.1" x 2.4" x 1.3")	7.8 x 6.2 x 3.2 cm (3.1" x 2.4" x 1.3")	11.8 x 2.5 x 14.3cm (4.6" x 1.26" x 5.6")
WEIGHT:					
ACCESSORIES:	Power supply 12V DC, 2A	Power supply 12V DC, 2A		Power supply 6V DC, 800mA	Power supply 5V DC, 2.5A
Specifications are subject to change without notice at <a href="http://www.kramerelectronics.com">http://www.kramerelectronics.com</a>					

## LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

### What is Covered

This limited warranty covers defects in materials and workmanship in this product.

### What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

### How Long Does this Coverage Last

Three years as of this printing; please check our Web site for the most current and accurate warranty information.

### Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

### What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

### What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

### How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at [www.kramerelectronics.com](http://www.kramerelectronics.com) or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

### Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

### Exclusive Remedy

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

### Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at [www.kramerelectronics.com](http://www.kramerelectronics.com) or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

**We welcome your questions, comments, and feedback.**

Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

E-mail: [info@kramerel.com](mailto:info@kramerel.com)



**SAFETY WARNING**

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-300281



Rev: 2